TECHNIUM
SOCIAL SCIENCES JOURNAL

Vol. 8, 2020

A new decade for social changes

www.techniumscience.com

ISSN 2668-7798

9 772668 779000

Information and communication technologies in postgraduate training of primary care doctors: a new look at the problem of using online resources during the Covid-19 pandemic

Tsodikova Olga¹, Korzh Oleksii², Hyria Maryna³

Kharkiv Medical Academy of Postgraduate Education, Kharkiv, Ukraine^{1 2 3}
okorzh2007@gmail.com²

Abstract. The experience of using information and communication technologies of distance learning in the process of postgraduate education of primary care physicians is considered. The implementation of various online resources in the training of health professionals in quarantine activities related to the COVID-19 pandemic, highlights the problem of information literacy and the use of information technology among physicians of all ages and psychotypes, and shows that the latest resources of telecommunications and computers. computer technologies should be widely implemented in all areas of health care.

Keywords. postgraduate education, physicians, primary care, distance learning, information networks, online resource.

Introduction

Today it is clear that the COVID-19 pandemic has seriously affected all areas of our lives. Experts everywhere record the growth of demand for technological solutions, considering informatization a sign of the modern globalized world [1, 2]. The scale of the effects of the coronavirus epidemic is forcing a new look at information technology, including digitalization and the medical field.

In recent weeks, due to excessive workload, stress, constant updating of orders and recommendations, Ukrainian doctors have faced a large-scale challenge - to provide assistance in a pandemic. Thus, in accordance with the resolution of the Cabinet of Ministers of Ukraine №215 of March 16, 2020, scheduled hospitalizations and operations were suspended, and the work of private medical centers and dental offices was temporarily suspended.

At the same time, the entire burden of providing medical care to patients of all ages falls on the shoulders not only of infectious disease physicians and epidemiologists, but also of primary care physicians - family physicians, pediatricians, therapists. To reduce the peak load on quarantined medical facilities and reduce the number of physical contacts, primary care physicians began counseling patients using elements of telemedicine.

Thus, with the availability of technical capabilities and setting up special functions in electronic devices, doctors began to provide patients with online consultations, avoiding unnecessary visits to the hospital. Pediatricians are often consulted on child care, vaccination. Concerned parents send photos of rashes or other changes on their child's skin and mucous

membranes, the results of laboratory tests for their interpretation. The patients receive advice on the treatment and prevention of exacerbation of chronic disease, dose adjustment and duration of medication. In cases of extreme necessity, after clarification of symptoms, the patient is quickly referred for examination by a specialist, for a personal appointment, or, using emergency medical care, urgently sent to the hospital. By the way, today the WHO and the CDC strongly recommend the use of telemedicine to diagnose potential cases of COVID-19 infection.

Theoretical review

Digitization during quarantine is becoming relevant for many patients. By signing up for an online appointment, the patient has the opportunity not to wait in line at the doctor's office, and at the specified time to go to the specialist from his "e-office" and consult in audio or video format, and most importantly - not to expose themselves and relatives to epidemiological danger.

It should be noted that telemedicine, as a branch, began to develop rapidly in the last decade [3]. Covering a number of functions in the form of not only video consultations, but also numerous mobile applications and devices (blood pressure parameters, glucose or insulin levels, etc.), telemedicine can significantly save financial and human resources, make medical care more accessible in remote parts of the country. And in today's conditions, the merger of primary health care centers with other medical institutions into a single telemedicine platform will enable hospitals of different levels to work more efficiently and technologically.

In the long-term period, one way or another, medicine will be forced to use information technology more widely, in particular in the system of continuing medical education. And today the qualification requirements for the medical specialty only increase over time, stimulating motivation for their own professional development, in particular with the use of information technology [4-6].

Given the current requirements of educational reform and health care reform, embodied in the Resolution of the Cabinet of Ministers of Ukraine № 302 of 28.03.2018 "On approval of the Regulations on the system of continuous professional development of health professionals", one of the urgent forms of postgraduate education by doctors, especially in the context of the COVID-19 pandemic, is distance learning, when the process of acquiring knowledge, skills and abilities occurs through the indirect interaction of distant participants in a specialized environment, created on base of modern psychological, pedagogical and communicative technologies in synchronous and asynchronous modes. There are such requirements for distance learning as efficiency - ensuring the improvement of the quality of perception of educational information, increasing the independence and cognitive activity of learners who work with methodological support; accessibility - providing opportunities for all participants in the educational process to use educational information using telecommunications technology and information network as well as efficiency - providing savings of time, resources, etc.

Returning to the issue of digitalization in the educational activities of physicians, in particular the use of distance learning for the quarantine period, it should be noted about the existing opportunity to study regardless of the location of the specialist. This is the so-called mobile learning (m-learning) or virtual interactive work with the listener using the platform of support and organization of distance learning Moodle. Physicians studying in the cycles of specialization and advanced training acquire skills of using electronic resources in the distance cycle (texts, graphics, formulas, illustrations, audio, video, glossary, etc.) and skills of appropriate tools for interactive communication with teachers, master various forms of knowledge control.

In addition to creating and using teaching materials in the LMS Moodle system, mobile and handheld IT devices are increasingly used in teaching and learning: personal digital assistant (PDA), mobile phones, laptops and tablets, and select formats and platforms such as Zoom, Cisco Webex, Skype, Google Hangouts Meet, Avaya Spaces, etc., taking into account the technical capabilities and support of learners and the possibility of their authentication.

According to experts, mobile learning is correlated with the concepts of distance learning and e-learning. If the latter two concepts are understood as separate, then mobile learning has common features with e-learning in the use of "mobile devices" and wireless networks, and distance learning is combined with the fact that it is carried out at any time, anywhere, and in the educational process necessarily involves the interaction of teacher and learner [7].

Due to the quarantine measures, the Google Classroom service has become more convenient for teachers and students to interact with personal Google accounts. The teachers can add students to the study themselves or send a code to join. Google Classroom provides the ability to create, test, and evaluate tasks in electronic form. In addition, the service allows teachers to make announcements and create discussions instantly, while learners can share resources with each other and answer questions in a chat.

The use of the Zoom system has also become convenient and appropriate. In 2017, Zoom announced the release of the first scalable telehealth product that allows doctors to receive their patients via video for consultation, now a solution called Zoom for Telehealth integrates with other health programs in hospital infrastructure and provides "virtual waiting room for patients". With distance learning for doctors in synchronous mode, the Zoom system provides features such as teacher meetings with learners on multiple screens and devices, sharing the HD screen and wireless network.

However, among the strategic issues related to the implementation of mobile education in the activities of higher medical educational institutions that need immediate solution, we should highlight the organizational, legal, methodological, informational, personnel, technical and financial support.

And for quality training of physicians with the use of informatization, regardless of its type, it is very important to have not only reliable technical support (high-quality and fast Internet access, modern smartphones or tablets, remote server access, IT consultations), lack of new technologies in educational activities, original pedagogical forms and methods of teaching, as well as a high level of professionalism and skill of the teacher.

Our own experience

Referring to our own experience, we can say that doctors are still extremely reluctant and insecure to use the knowledge and skills of informatization in their professional activities. The range of information literacy and opportunities for the use of information technology among physicians is very wide, depending on a number of objective and subjective factors (age, specialty, position, psychotype, material support, motivation, etc.) [8].

The introduction of new distance cycles for physicians requires not only new approaches to the relationship between traditional components of the educational process and the latest technologies, but also the restoration of interaction between students, teachers and educational environment, and changing stereotypes that were established at school or university. And this is a difficult process.

Almost 10 years of experience in the use of elements of informatization of education among general practitioners and pediatricians, which is embodied in the developed distance cycles of thematic improvement on the Moodle platform, shows the urgent need to constantly

increase the motivation of students to learn. It is our use of such psychological and pedagogical techniques as attracting attention to the cycle, maintaining the importance and confidence of this form of learning, satisfaction with the results at the end of the cycle, allow our students to perform tasks honestly, solve situational problems and actively discuss them in forums with teachers and colleagues.

Today, conducting thematic improvement courses for primary care physicians in a remote format, we try not to overload the materials with unnecessary elements. In the postgraduate courses, we rationally and consistently present illustrated slides with links to "pop-up" windows, through which the learner gets acquainted with educational video and audio files, presentations, graphics, diagrams and more. The main thing is to draw the learners's attention to the presented material, sometimes with the help of unusual, non-standard, creative techniques.

Conclusions

Filling distance learning courses with information material (e-books, presentations, etc.) and tests, providing opportunities for learners to communicate (forums and chats, which discuss current issues and solutions to practical classes), promotes the activity of doctors to attend the distance learning course and increase their interest to educational material. And timely, constructive feedback from the teacher - the tutor of the course, also strengthens the motivation to informatize learning. We do our best to ensure that the feedback from the teacher is informal, targeted and supportive. And this is very important today for doctors who are at the forefront of the fight against coronavirus.

References

- [1] Goh, J. M., Gao, G., & Agarwal, R. (2016). The creation of social value: Can an Online Health Community reduce rural-urban health disparities? *MIS Quarterly*, 40(1), 247–263. doi: 10.25300/MISQ/2016/40.1.11
- [2] McAfee, A., & Brynjolfsson, E. (2017). *Machine, platform, crowd: Harnessing our digital future*. New York, NY: Norton and Company.
- [3] Angst, C., & Agarwal, R. (2009). Adoption of electronic health records in the presence of privacy concerns: The elaboration likelihood model and individual persuasion. *MIS Quarterly*, 33(2), 339–370. doi: 10.2307/20650295
- [4] Soja, E. (2017). Information and communication technology in active and healthy ageing: Exploring risks from multi-generation perspective. *Information Systems Management*, 34(4), 320–332. doi: 10.1080/10580530.2017.1366217
- [5] Tams, S., Grover, V., & Thatcher, J. (2014). Modern information technology in an old workforce: Toward a strategic research agenda. *Journal of Strategic Information Systems*, 23(4), 284–304. doi: 10.1016/j.jsis.2014.10.001
- [6] Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478. doi: 10.2307/30036540
- [7] Ayanso, A., Cho, D., & Lertwachara, K. (2014). Information and communications technology development and the digital divide: A global and regional assessment. *Information Technology for Development*, 20(1), 60–77. doi:10.1080/026811102.2013.797378
- [8] Korzh O., Tsodikova O. (2019). Improving doctor-patient communication in a primary care setting. *Practica Medicala*. Vol.14, №1(64).-P.13-17.